

CLAIMS

1. An inclinometer for measuring the angle between a reference angular position and an angularly adjustable surface, said adjustable surface having a leading edge and a trailing edge, said inclinometer comprising:

a pair of accelerometers for sensing the gravitational vector of the earth and for providing an output signal from each accelerometer;

centering devices for referencing the accelerometers to the leading and trailing edges of the adjustable surface;

a data processor for receiving the output signals from the pair of accelerometers to determine a first reference position, to determine a second adjusted position and to determine an angle between the first reference position and the second adjusted position; and

a display for receiving information from the data processor and for displaying the angle of the surface as determined by the data processor.

2. The inclinometer as claimed in accordance with claim 1 wherein said adjustable surface includes a fixed portion and an angularly adjustable portion.

3. The inclinometer as claimed in accordance with claim 1 wherein said adjustable surface is a control surface of an aircraft.

4. The inclinometer as claimed in accordance with claim 3 wherein said aircraft is a model aircraft.

5. The inclinometer as claimed in accordance with claim 1 further comprising:

a generally linear beam; and

a pair of spaced apart and opposing arms that are mounted on said beam,

said centering devices disposed on each of said arms for engaging the leading and trailing edges of the adjustable surface, respectively.

6. The inclinometer as claimed in accordance with claim 5 wherein said arms are generally perpendicular to said beam.

7. The inclinometer as claimed in accordance with claim 5 wherein at least one of said pair of arms is slidably disposed on said beam.

8. The inclinometer as claimed in accordance with claim 5 wherein said pair of accelerometers, said data processor and said display are disposed on said beam.

9. An inclinometer for measuring the angle between a reference angular position and an angularly adjustable surface, said inclinometer comprising:

a pair of accelerometers for sensing the gravitational vector of the earth and for providing an output signal from each accelerometer;

said accelerometers attached to the adjustable surface;

a data processor for receiving the output signals from the pair of accelerometers to determine a first reference position, to determine a second adjusted

position of the adjustable surface and to determine an angle between the first reference position and the second adjusted position; and

a display for receiving information from the data processor and for displaying the angle of the adjustable surface as determined by the data processor.

10. The inclinometer as claimed in accordance with claim 9 further comprising a clamping device to attach the accelerometers to the adjustable surface.

11. The inclinometer as claimed in accordance with claim 10 wherein said clamping device grips opposite sides of the adjustable surface.

12. The inclinometer as claimed in accordance with claim 10 wherein said pair of accelerometers, said data processor and said display are disposed on said clamping device.

13. The inclinometer as claimed in accordance with claim 9 wherein said adjustable surface is a control surface of an aircraft.

14. The inclinometer as claimed in accordance with claim 13 wherein the aircraft is a model aircraft.

15. A method for measuring the angle of an adjustable surface between a first reference position and a second adjusted position, said method comprising the steps of:

attaching said inclinometer including a pair of accelerometers, a data processor and a display to said adjustable surface;

sensing the gravitational vector of the earth with the pair of accelerometers;

providing output signals from each accelerometer to said data processor;

determining with the data processor the first reference position from the output signals of the pair of accelerometers;

determining with the data processor the second adjusted position from the output signals of the pair of accelerometers;

determining the angle between the first reference position and the second adjusted position; and

displaying said angle on the display.

16. The method for measuring the angle of an adjustable surface between a first reference position and a second adjusted position as claimed in accordance with claim 15 wherein the step of attaching the inclinometer to the adjustable surface includes centering the inclinometer between leading and trailing edges of the adjustable surface.

17. The method for measuring the angle of an adjustable surface between a first reference position and a second adjusted position as claimed in accordance with claim 15 wherein the step of attaching the inclinometer to the adjustable surface includes gripping opposite sides of the adjustable surface.

18. An inclinometer for measuring the angle between a reference angular position and an angularly adjustable

surface, said adjustable surface having a leading edge and a trailing edge, said inclinometer comprising:

a pair of accelerometers for sensing the gravitational vector of the earth and for providing an output signal from each accelerometer;

means for referencing the accelerometers to the leading and trailing edges of the adjustable surface;

data processing means for receiving and processing the output signals from the pair of accelerometers to determine a first reference position, to determine a second adjusted position and to determine an angle between the first reference position and the second adjusted position; and

means for displaying the information received from the data processing means and for displaying the angle of the surface as determined by the data processing means.

19. The inclinometer as claimed in accordance with claim 18 wherein said adjustable surface includes a fixed portion and an angularly adjustable portion.

20. The inclinometer as claimed in accordance with claim 18 wherein said adjustable surface is a control surface of an aircraft.

21. The inclinometer as claimed in accordance with claim 20 wherein said aircraft is a model aircraft.

22. The inclinometer as claimed in accordance with claim 18 further comprising:

a generally linear beam; and

a pair of spaced apart and opposing arms that are mounted on said beam,

said means for referencing disposed on each of said arms for engaging the leading and trailing edges of the adjustable surface, respectively.

23. The inclinometer as claimed in accordance with claim 22 wherein said pair of accelerometers, said data processing means and said means for displaying are disposed on said beam.

24. An inclinometer for measuring the angle between a reference angular position and an angularly adjustable surface, said inclinometer comprising:

a pair of accelerometers for sensing the gravitational vector of the earth and for providing an output signal from each accelerometer;

means for attaching said accelerometers relative to the adjustable surface;

data processing means for receiving the output signals from the pair of accelerometers to determine a first reference position, to determine a second adjusted position of the adjustable surface and to determine an angle between the first reference position and the second adjusted position; and

means for displaying the information received from the data processing means and for displaying the angle of the adjustable surface as determined by the data processing means.

25. The inclinometer as claimed in accordance with claim 24 wherein said means for attaching the accelerometers relative to the adjustable surface comprise clamping means for gripping opposite sides of the adjustable surface.

26. The inclinometer as claimed in accordance with claim 25 wherein said pair of accelerometers, said data processing means and said means for displaying are disposed on said clamping means.

27. The inclinometer as claimed in accordance with claim 24 wherein said adjustable surface is a control surface of an aircraft.

28. The inclinometer as claimed in accordance with claim 27 wherein the aircraft is a model aircraft.